Mirror Development
Technology Days 2010
In the
Government

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Welcome

Welcome

Old Business

- Presentations from 2009 have been distributed via CD
- If you have not gotten your CD – see Hans Peter

New Business

- Tech Days 2011 will likely be near GSFC

Important Information

- Coffee Breaks, Lunch and Receptions
- Photograph tomorrow before coffee break

Announcements

- BATC Tours
- Resume & Job Table

Purpose of Tech Days

Mirror Technology is critical for NASA & DoD missions.

Topics discussed enable missions for next 10 to 20 yrs.

Tech Days has two Goals:

How are we Spending the Taxpayer's money

1. Is the Government Investing the Taxpayer's money wisely
   Are we funding 5 good ideas or 1 good idea 5 times?
2. Are we getting good value for our investment?
3. How can we coordinate our activities to maximize the efficacy of our investments.

Provide a networking opportunity for Vendors and Government.

Technology Days 2009

2010 Alabama State Science Fair
Senior Division First Award $150

Pranjal Gupta

10th Grader, Auburn High School

Catch More Sun: Affordable Energy

Pranjal developed a Fresnel lens system to focus light rays onto a solar cell from sun rise or sun set which would normally only strike the solar cell at a grazing angle of incidence. Pranjal has file a patent disclosure on his invention.

2009 Alabama State Science Fair
Senior Division Second Award $100

Robert Austin DeSilva

11th Grader, Catholic High School

Laser SIM

Robert wrote a software package to bounce laser beams about a 3D virtual space using 3D flat mirrors. Since Regional he updated his code to use Snell's Law.

Robert also received a $50 Second Award at the North Alabama Regional Science Fair

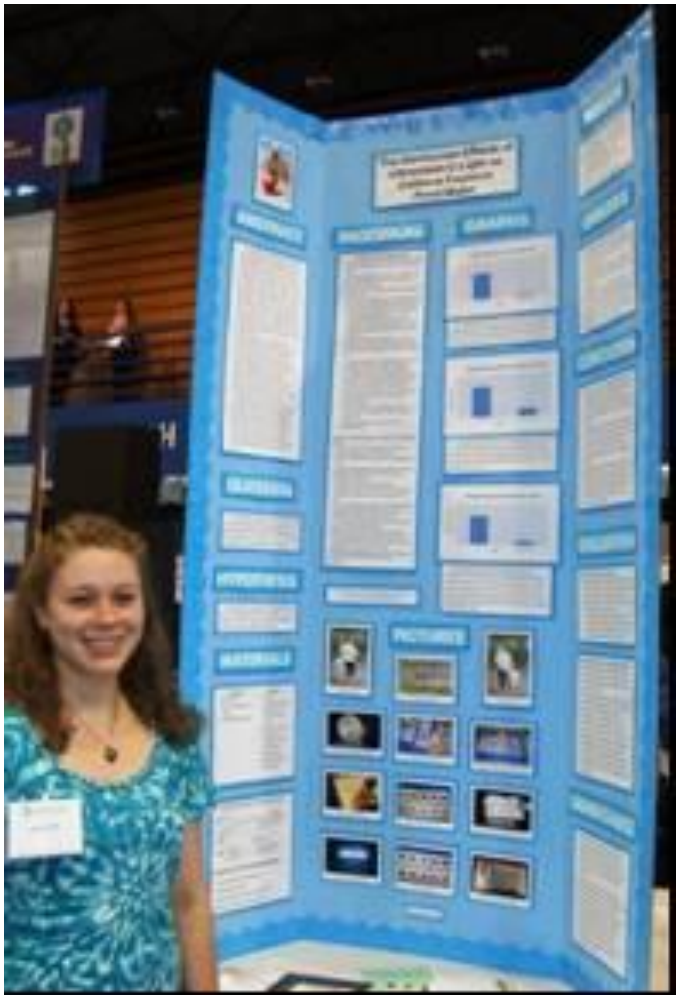
2009 Alabama State Science Fair
Senior Division Second Award $100

Emily Duke

12th Grader, Jefferson County International Baccalaureate

Germicidal Effects of Ultraviolet-C light on Coliform found in Pond water

Emily studied the efficacy of different exposure times of UV-C for killing Coliform contamination in water.



2009 North Alabama Regional Science Fair
Senior Division First Award $100

Matthew Russell Eskridge

10th Grader, Covenant Christian Academy

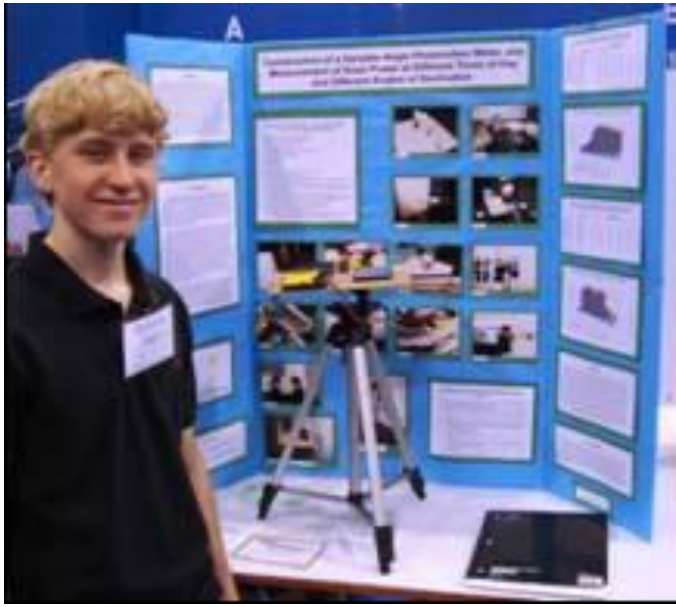
Detecting Cosmic Rays in your Garage

Matthew built a high voltage cascade detector in a PVC plumbing pipe to count cosmic rays. He calibrated his sensor with a sample of uranium which he bought over the internet and a Geiger counter.

2009 Alabama State Science Fair
Senior Division Third Award $50

Stephen Leahy

9th Grader, at Catholic High School



Construction of a Variable-Angle Photovoltaic Meter and Measurement of Solare Power for Different Times of Day and Different Declination Angles

Stephen placed a solar cell onto of a camera tripod and using a protractor measured the produced output as a function of angle from level. He also observed that the angular dependence only existed on sunny days and went away on cloudy days.

Stephen also received a $25 Honorable Mention at the North Alabama Regional Science Fair

2009 Alabama State Science Fair
Junior Division First Award $75

Joseph Patrick Lee

7th Grader, Master's Hand Christian School

It's Light

Joseph made a light bulb. He made filaments with different metals, put them inside a glass jar and measured the time duration that they glowed before they failed. Then he back filled the jar with helium and measured how the time duration for each filament was increased.

Joseph also received a $100 First Award at the North Alabama Regional Science Fair

2009 Alabama State Science Fair
Junior Division Second Award $75

Nick Simerly

8th Grader, Westminster Christian Academy

Smart Wireless, Energy Efficient Motion Sensor

Nick used a wireless motion sensing system to 'trigger' a video camera to observe objects in the field of view. He studied the strength of signal & signal to noise as a function of the objects size, distance and velocity.

Nick also received a $50 Second Award at the North Alabama Regional Science Fair

2009 Alabama State Science Fair
Junior Division Third Award $50

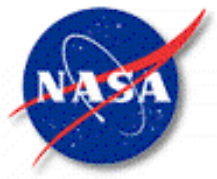
Matthew T. Castleberry

7th Grader, Hampton Cove Middle

Portable Energy Source

Matthew measured the photonic output of various light sources and the electrical power consumed by the same light sources. He did not divide one by the other to obtain an efficiency.

Matthew also received a $25 Third Award at the North Alabama Regional Science Fair



Thank You

Thank You and Acknowledgements

Organizing Committee:

- Dr. David Content, NASA Goddard Space Flight Center
- Mr. Hans-Peter Dumm, US Air Force Research Lab, Space Vehicles Directorate
- Dr. Brian Evans, Lt. Col., National Reconnaissance Office
- Dr. Steve LeClair, Missile Defense Agency
- Dr. Carol R. Lewis, Jet Propulsion Laboratory
- Dr. Larry Matson, U.S. Air Force Research Laboratory, Material Directorate
- Dr. H. Philip Stahl, NASA Marshall Space Flight Center
- Dr. David Wick, Sandia National Laboratory

CPIA: Michelle Claymore

SPIE: Marilyn Gorsuch

AFRL: Hans-Peter Dumm